

IN THE CLAIMS

Please amend claims 1, 3, 4, 8, 9, 15, 19 and 20 as follows:

1. (Amended) A control device, comprising:

A component having a magnetic portion, said magnetic portion having uniformly convex sidewalls that terminate at opposing polar portions symmetrically disposed [symmetry] about an axially disposed hole, said magnetic portion further having a shape effective to provide a desired transfer function and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis;

a shaft extending into said hole;

at least one non-magnetic bushing supporting said component; and

at least one magnetic sensor disposed adjacent to said magnetic portion.

3. (Amended) The control device of claim 2 wherein said magnetic powders [are a mixture of] include neodymium [and ferrite].

4. (Amended) The control device of claim 2 wherein said [magnetic portion has uniformly convex walls terminating at] opposing [planar] polar portions are planar.

8. (Amended) A control device, comprising:

A component having a magnetic portion, said magnetic portion having uniformly convex sidewalls that terminate at polar portions symmetrically disposed [symmetry] about an axially disposed hole, said magnetic portion further having a shape effective to provide a desired transfer function and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis;

a hollow shaft having first and second opposing ends and extending through said hole;

a handle disposed at said first end of said hollow shaft;

a first magnet disposed within said hollow shaft in displacement from said component;

at least one first magnetic sensor disposed adjacent to said magnetic portion; and

at least one second magnetic sensor mounted to said hollow shaft in apposition to said first magnet.

*cnt at*  
9. (Amended) The control device of claim 8 wherein said first magnet is generally shaped as a cylinder and has north and south poles disposed along sidewalls [thereof] of said cylinder.

*as*  
15. (Amended) The control device of claim 14 wherein said [magnetic portion has uniformly convex walls terminating at] opposing [planar] polar portions are planar.

*4*  
19. (Amended) A [magnetic component] control device, comprising:  
A [spheroidal] magnet in combination with one or more magnetic sensors, said magnet having a shape that is effective to provide [a desired] an essentially linear relationship with said one or more magnetic sensors between angle position and magnetic flux density [transfer function] and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis, said magnet being formed from a uniform mixture of magnetic powders dispersed in a polymeric matrix.  
*Ins. b<sub>1</sub>* *b<sub>1</sub>*

20. (Amended) The [magnetic component] control device of claim 19 wherein said magnet is coated with a low coefficient of friction polymer.

*X*  
Please add new claims 21-28 as follows:

---21. The control device of claim 19 wherein said magnet has a shape that is essentially spheroidal with uniformly convex sidewalls that terminate at opposing polar portions.

*19*  
22. The control device of claim 21 wherein said opposing polar portions are planar.

*22*  
23. The control device of claim 22 wherein a distance between said opposing polar portions provide said magnet with a desired angle of rotation.

*23* *22*  
24. The control device of claim 23 having a concave portion disposed between said uniformly convex sidewalls thereby providing said control device with a controlled non-linear relationship between angle position and magnetic flux density.

*b* *24* *19*  
25. The control device of claim 24 wherein said magnet is coated within a non-magnetic material.